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CHRONICLE OF THE WORLD HEALTH ORGANIZATION

HEALTH PROGRESS IN THE EASTERN MEDITERRANEAN
FILARIASIS IN THAILAND
MATERNAL AND CHILD HEALTH IN SOUTH-EAST ASIA

REPORTS OF EXPERT GROUPS
REVIEW OF WHO PUBLICATIONS
NOTES AND NEWS
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The World Health Organization (WHO) is a specialized agency of the United Nations and represents the culmination of efforts to establish a single intergovernmental health agency. As such, it inherits the functions of antecedent organizations such as the Office International d'Hygiène Publique, the Health Organization of the League of Nations, and the Health Division of UNRRA.

WHO had its origin in the proposal made at the United Nations Conference held in San Francisco in 1945 that a specialized agency be created to deal with all matters relating to health. In 1946, representatives of 61 governments met at the International Health Conference, New York, drafted and signed the WHO Constitution, and established an Interim Commission to serve until the Constitution could be ratified by 26 Member States of the United Nations. The Constitution came into force on 7 April 1948, the First World Health Assembly met in Geneva in June 1948, and on 1 September 1948 the permanent Organization was established.

The work of the Organization is carried out by three organs : the World Health Assembly, the supreme authority, to which all Member States send delegates; the Executive Board, the executive organ of the Health Assembly, consisting of 18 persons designated by as many Member States; and a Secretariat under the Director-General.

The scope of WHO's interests and activities exceeds that of any previous international health organization and includes, in addition to major projects relating to malaria, tuberculosis, venereal diseases and treponematoses, maternal and child health, nutrition, and environmental sanitation, special programmes on public-health administration, epidemic diseases, mental health, professional and technical training, and other public-health subjects. It is also continuing work begun by earlier organizations on biological standardization, unification of pharmacopoeias, addiction-producing drugs, health statistics, international sanitary regulations, and the collection and dissemination of technical information, including epidemiological statistics.

* * *

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SCHEDULE OF MEETINGS

14-19 June	**Conference on School Health Services, Grenoble**
23 June-3 July	**Expert Committee on the International Pharmacopoeia, thirteenth session, Geneva**

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HEALTH PROGRESS IN THE EASTERN MEDITERRANEAN *

THE REGION

The Eastern Mediterranean Region, which extends from East Pakistan in the East to the new country of Libya in the West, from Syria and Iran in the North to Ethiopia in the South, probably contains about 170 million people. . . . It has been a crossroads of humanity since the beginning of time. The earliest known civilizations are still being dug up here and there in the region. Monotheistic religion came from this region, and one has only to mention the art of writing, and to use the word " chemistry ", to indicate how much " North Atlantic " civilization is in debt to the Eastern Mediterranean.

For over one thousand years, a great deal of this region was politically unified under the Persian, Macedonian, and Roman Empires. For the first six centuries after Christ, much of the region was influenced by Christianity. Since then, the major influence has been Islam, which is today the major factor in the cultural unity of the region. Probably about 85% of the population are Moslems, about 5% are Christians of various denominations, and about 1% to 2% are Jews. . . .

Western civilization has, of course, affected most the parts of the region which are near shipping routes. The Mediterranean coast, Egypt, and Pakistan have been much influenced by Western customs and practices; Yemen, Saudi Arabia, and the Sheikdoms of the Oman in the Persian Gulf are still relatively unaffected. This Western influence has had much more effect on what one may call the " policy-making classes " of the population than on the artisans or peasants. The upper classes have much the same birth- and death-rates, life expectancy, and standards of housing and education as their counterparts in Western countries; but . . . more than three-quarters of the people still continue to live very much as they did many centuries ago. The professional middle class, which plays such a large part in the affairs of Western countries, is comparatively undeveloped in this region. However, this does not apply to Israel because of the very large immigration into Israel of European middle-class people. For example, Israel has one physician for about every 350-400 inhabitants, while Iran has perhaps about one doctor for every 60,000.

About 80% to 90% of the whole region is desert, and the difference between the town and the country and the desert, for there are the three, is very much greater than it is in North Atlantic communities. . . . The desert is not an uninhabited waste but is frequently a kind of grazing steppe with considerable extremes of temperature, very little rain, and scanty vegetation. It is inhabited by a small population, for its size, of nomads. The countryside is restricted usually to narrow tracks beside the rivers and has hot summers and temperate winters, and very considerable productive capacity for its area. The urban population varies greatly from country to country—e.g., it is estimated at under 10% in the Sudan and the Arabian peninsula, about 40% of the population of Lebanon, and perhaps 50% of the population of Israel. The nomads are probably one-third of the population of the Arabian Peninsula, but they are a very small percentage of the people of Egypt and Lebanon.

HEALTH CONDITIONS

By and large, statistical data for this region are inadequate and usually not very

* Paper read by Dr. Aly Tewfik Shousha, Regional Director, before the Conference of the American Public Health Association, New York, November 1953. This paper has also been published in the *American Journal of Public Health*, 1954, **44**, 18.

reliable. Egypt, which is in many ways one of the best-developed countries, has a census taken at ten-yearly intervals which is fairly reliable; but this can be said of practically no other country in the region. There are high birth-rates and fairly high death-rates; the latter are, however, falling. The rates of natural increase are going up, partly because of decreases in general mortality, particularly in infant and child mortality, although these rates are still high by comparison to Western standards. . . .

The main achievement of modern public-health methods in the Middle East has been the control of pestilential diseases. Today, when these diseases reappear in epidemic form, they can be localized and stamped out by national health services, with assistance, if necessary, from WHO—as was the case in Egypt during an epidemic of cholera in 1947.

The fight against debilitating endemic diseases has begun. Thus far, the most important successes have been realized in combating malaria, which has been almost entirely eliminated from Cyprus, confined to small areas in Israel and Lebanon, and brought under control in some districts of other countries. The village populations in most areas, however, are still burdened by a combination of such chronic illnesses as malaria, trachoma, bilharziasis, hookworm, and venereal diseases, which shorten their lives and reduce their capacity for work. Most of the governments are planning to launch campaigns against these diseases, through use of insecticides, drainage of swamps and canals, provision of adequate waste-disposal systems and hygienic water-supplies, and establishment of village clinics and dispensaries. In the majority of the countries concerned, such measures have as yet reached but a small proportion of the population. In general, any appreciable improvement in the lot of the Middle Eastern peasant is inconceivable without the institution of a broad sanitation programme.

Aside from the communities in which special health centres have been established, the nomadic and village population has practically no access to medical care, since there are very few physicians or hospitals outside the larger cities. In Iraq, for example, there was, in 1945, a population of 4,611,000, with only 569 physicians; of these, 308 were located in the capital, Baghdad, which has less than 10% of the population of the country.

In the Middle East, there is a basic and urgent need not only to train many more doctors, nurses, and public-health officers, but also to develop a medical and health corps dedicated to rural services. The financial difficulties involved in developing such trained personnel, and in supporting their work among poverty-stricken villagers who cannot afford fees, constitute tremendous problems in these countries, as do the difficulties that arise from the fact that city-trained medical and health personnel are often reluctant to live and work in isolated "backward" villages where they can enjoy few of the amenities and satisfactions of life to which they are accustomed.

The nutritional level of the peoples in this region cannot be regarded as satisfactory. Diet often consists mostly of cereals, pulses, and vegetables, with very little animal or fish protein. There is fairly often a deficiency in calories, in fats and proteins, and in certain vitamins and minerals. Most of the governments are aware of these deficiencies, and studies are under way to determine what can be done about them. . . .

WHO ACTIVITIES

Two main trends can be seen in the health work of the World Health Organization in the Eastern Mediterranean Region: assistance to governments in (1) the strengthening of public-health services, and (2) extending and improving educational facilities for

medical and related personnel, including auxiliary health workers. These lines of work have been developed to fill needs made manifest by studies and surveys carried out since the Regional Office was opened in 1949.

In many countries of the region, health ministries are at an early stage of their history, and the help of experienced public-health officers during this expansion period is important. In addition, training facilities are notably inadequate, especially in public health, and WHO is concentrating on aiding governments to meet some of these needs.

Advisory services

The Regional Office helps governments with advisory health services of all kinds—visits of the technical staff of the Office, of special consultants who are experts in their particular field of work, and of missions composed of several highly qualified persons.

Public-health officers have been appointed to assist a number of governments, including those of Ethiopia, Iran, Libya, Saudi Arabia, and Yemen. Jordan, Lebanon, and Syria are served by the Area Representative in Beirut.

Two public-health missions, composed of specialists from various countries, spent several weeks each in Egypt and Israel, studying government services and making recommendations. Special missions along the same lines have included a medical teaching mission to Israel and Iran, and thoracic surgery and nurse-training missions to Israel.

A number of public-health surveys of selected areas in various countries have been made; and a health demonstration, based on WHO recommendations, is already in operation in the Qalyub area of Egypt. Some surveys are very broad in scope, such as a bilharziasis survey which included Iran, Iraq, Jordan, Lebanon, Saudi Arabia, Somalia, the Sudan, Syria, and Yemen; and a mental health survey that was made in Egypt, Iraq, Lebanon, the Sudan, and Syria. A food hygiene survey has just been completed in Egypt, Iraq, Lebanon, and Syria; and a nutrition survey was made some time ago in Iran, Jordan, Lebanon, and Syria.

Most special surveys, however, involve only one country : cerebrospinal meningitis in the Sudan, leprosy in Ethiopia, cholera in Pakistan, nursing in Israel, mental health in Jordan, pellagra in Egypt, ankylostomiasis in Iraq, handicapped children in Lebanon, industrial health and occupational diseases in Egypt and in Iran, trachoma in Iran, bacteriology in Israel, and hospital services and organization in Egypt. A medico-legal consultant has visited Lebanon.

Training and fellowships

Education is an essential part of the WHO approach to improvement of health services. The training of medical and other health workers is accomplished in four ways : (1) by developing instructors and administrators, (2) by training doctors, nurses, public-health engineers, and sanitarians, (3) by granting long-range fellowships for undergraduate studies, and (4) by training auxiliary health workers as a shortcut to overcome immediate and serious shortages of personnel.

In practice, this has led to the appointment of visiting professors of physiology and pathology to the Dow Medical College, Karachi; of a lecturer in parasitology to the Royal Medical College in Baghdad; of a lecturer and research worker in virology (especially concerning trachoma) to the Giza Ophthalmic Memorial Hospital in Egypt; of a lecturer in public health to the Medical Faculty of the French University in Beirut; of a public-health expert to aid in the establishment of the new department of public health at the American University of Beirut and to act as director for the first two years; of instructors to the Ashraf School of Nursing in Teheran; and of instructors for the University Nurse Training School in Damascus.

The training of community health visitors in connexion with maternal and child health projects in Peshawar, Dacca, and Lahore has been organized; similar projects have recently been initiated in Baghdad and Karachi, and two more are due to start shortly, in Jordan and Libya. A comprehensive training scheme for community health visitors and sanitary aides has been developed for Ethiopia.

A number of individual fellowships in undergraduate medicine have been awarded to students from countries such as Ethiopia, Libya, and Saudi Arabia, where there are no medical schools. Many fellowships for postgraduate study of subjects ranging from anaesthesia to zoonoses have been arranged. Twenty-four fellowships to study public health have been awarded; and fellowships to study the school health systems of Denmark and the Netherlands were awarded to a group of students from Egypt, Iran, Iraq, Israel, Jordan, Lebanon, and Syria.

The total number of fellowships awarded in the past few years, and the sources of funds, were as follows :

Year	*WHO*	*Technical Assistance*	*UNICEF*	*Total*
1951	80	6		86
1952	53	52	8	113
1953	147	54	2	203

The seminar is another form of training being used. Examples are the Regional Eye Diseases Seminar, held in conjunction with the jubilee meeting of the Egyptian Ophthalmological Society, for which ten fellowships were awarded to ophthalmologists from different countries in the region; a joint FAO/WHO nutrition seminar, held in Cairo in 1950; and a training course in vital and health statistics, in 1951, in which WHO co-operated and which was attended by Fellows from eight countries, and a mental health seminar held in Beirut in 1953, with 20 participants from eight countries.

Maternal and child health

Demonstrations of modern methods in maternal and child health, including the teaching of domestic midwifery and minor paediatrics, are in progress in a number of countries. One project, in Lahore, Pakistan, has already terminated its international phase after two and a half years' work. Projects are under way in Iraq, Lebanon, Pakistan, and Syria; others will be started in Iran, Jordan, and Libya. In addition, WHO is helping in the designing and equipping of the Children's Hospital in Karachi, which is being financed by the Government, with UNICEF assistance.

Nursing

The growing realization of the need for really good nursing services has led to the appointment of nursing officers to the Governments of Lebanon, Libya, Pakistan, and Syria; similar help is planned for Egypt.

WHO has provided instructors for nursing schools in Iran, Israel, East Pakistan, and Syria. Egypt will be host to a regional nursing college, which is intended to provide nurses qualified to fill supervisory and teaching posts. Nurse training is included in maternal and child health, tuberculosis, and venereal disease projects.

Rehabilitation of the physically handicapped

In Lebanon, a model centre for the treatment and education of physically handicapped children is being set up, with the co-operation of UNICEF and the Foreign Operations Administration of the USA (USFOA). This will be used as a regional training centre as well.

A physiotherapist and special equipment for a training school for the rehabilitation of poliomyelitis victims have been provided for Israel, also with the help of UNICEF.

WHO is associated with the Technical Assistance programme and the ILO in a regional centre for the rehabilitation of the blind in Egypt.

Disease control

Malaria-control projects are under way in Iraq, Saudi Arabia, and Syria. A successfully completed international project in Iran is now being carried on by Iranian members of the demonstration team, with the technical advice of WHO and financial assistance from USFOA. WHO has just completed assistance to a project in Lebanon, now under the direction of the national team; DDT for future operations has been requested from UNICEF. A project in Pakistan, completed by WHO, is being extended by the national team; DDT for this work is being provided by UNICEF.

Egypt and Pakistan are now building DDT plants, with Technical Assistance funds, and part of the production will be utilized for public-health purposes.

The extent of the bilharziasis problem in the region has warranted the special attention of a team of experts, who studied the situation in a number of countries, as mentioned above. In Egypt, a co-ordinated project that includes snail destruction, treatment of cases, health education, and environmental sanitation is in progress. New snail-killing chemicals are being tried out to determine their relative effectiveness. A similar project combining malaria and bilharziasis control has been initiated in the Jezirah district of Syria.

The high incidence of trachoma has made it the object of special studies for some time, but difficulties have been encountered in devising a practical method for mass campaigns. A pilot control project is to be undertaken in the Qalyub Health Demonstration Area in Egypt, and this may indicate the best approach for other countries of the region.

The first venereal-disease-control project in the region was carried out in Egypt and is now completed. Besides demonstrating control methods, it provided training for serologists, nurses, laboratory technicians, and social workers from Egypt, Lebanon, Pakistan, and Syria. Similar projects are now under way in Ethiopia, Iran, Pakistan, and Saudi Arabia. A bejel/syphilis-control project has been completed in Iraq; and another will soon begin in the adjoining country of Syria, where health conditions are, in many ways, similar.

A leprosy survey was made in Ethiopia in 1950 and, on the basis of the recommendations which resulted, a demonstration of leprosy control took place there during 1952. A similar project is now planned for Iraq.

The attack on tuberculosis is twofold, namely, through demonstration and training centres for control of the disease, and by BCG-vaccination campaigns (financed largely by UNICEF), which are being integrated with the work of the centres. The first tuberculosis demonstration and training centre, in Turkey—which was then in the Eastern Mediterranean Region—was a great success; new centres have now been opened in Egypt, Iraq, Pakistan (in Dacca and Karachi), and Syria. Others are to open soon in Ethiopia, Iran, Israel, and Jordan. BCG antituberculosis vaccination campaigns have already been completed in Aden, Egypt, and Syria, and BCG vaccination has been established as a national service. Campaigns are in operation, with international help, in Ethiopia, Iran, Iraq, Jordan, Libya, and Pakistan; and a survey of needs has been made in Saudi Arabia.

Plans to help control the annually recurring epidemics of cerebrospinal meningitis in the Sudan have been made, but lack of funds has so far prevented their execution. A study of the situation was made, and experimental work was done by a special consultant and Regional Office staff members.

A rabies-control project was carried out in Israel in 1950 and is being continued by the Government; other forms of zoonoses are also receiving attention in Israel. Fifteen Fellows from the countries of the region attended a rabies seminar in Coonor, India, to learn laboratory techniques.

In Syria, a pilot project for favus control among schoolchildren is to begin in 1954, with UNICEF help.

Environmental sanitation

Sanitarians are indispensable in nearly every kind of health work; and, although it has not been financially possible to develop many projects dealing specifically with environmental sanitation, this aspect of health has not been neglected. For example, it is an integral part of health demonstration areas, of insect control, of epidemic disease control, and of maternal and child health work. The regional adviser on environmental sanitation has given advice on sanitation problems in projects such as cholera control in Pakistan; bilharziasis control in Egypt; the joint malaria and bilharziasis project in Syria; malaria control in Iraq, Lebanon, Saudi Arabia, and Syria; the trachoma pilot project in Egypt; and an insect-control project in Iran. A regional study of the importance of the fly as a health menace was made by a special consultant.

The American University of Beirut, using USFOA funds, has helped with the training of sanitarians. In the past three years, 27 fellowships have been awarded to study environmental sanitation.

Health education of the public

It is recognized that health education is an urgent need in this region and that this must be combined with practical demonstrations to have effect. Health educators are being appointed in a number of countries—for example, in the recently completed venereal-disease demonstration project in Egypt. A health educator is also working in the Qalyub Health Demonstration Area, Egypt, and with the bilharziasis-control project in the same country. Health education of the public has been initiated in Libya with the appointment of two Arabic-speaking girls to begin on the problem of the health education of women. WHO is also participating in the Arab States Fundamental Education Project at Sirs-El-Layyan, Egypt, and has supplied a public-health adviser and a health educator for the project; the adjoining Qalyub Health Demonstration Area will provide practical field work for the students.

Epidemiological intelligence service

The Regional Office in Alexandria is one of four centres in the world for the collection and dissemination of epidemiological information and quarantine notifications, which are then transmitted twice weekly by radio in a new code compiled by WHO. The regional centre also settles disputes that arise in the application of the new International Sanitary Regulations and collects health data on the Mecca Pilgrimage. In connexion with the latter, WHO is aiding in the equipping and staffing of the new quarantine station at Jeddah, which is being erected by the Saudi Arabian Government.

Public-health laboratories

To reinforce growing public-health services, aid is being given to develop public-health laboratories in several countries. In Jordan, the public-health laboratory in Jerusalem is already operating; help will be given to Israel to expand an existing laboratory; and laboratories in Iran and Lebanon are in the planning stage and are to be established principally with USFOA funds.

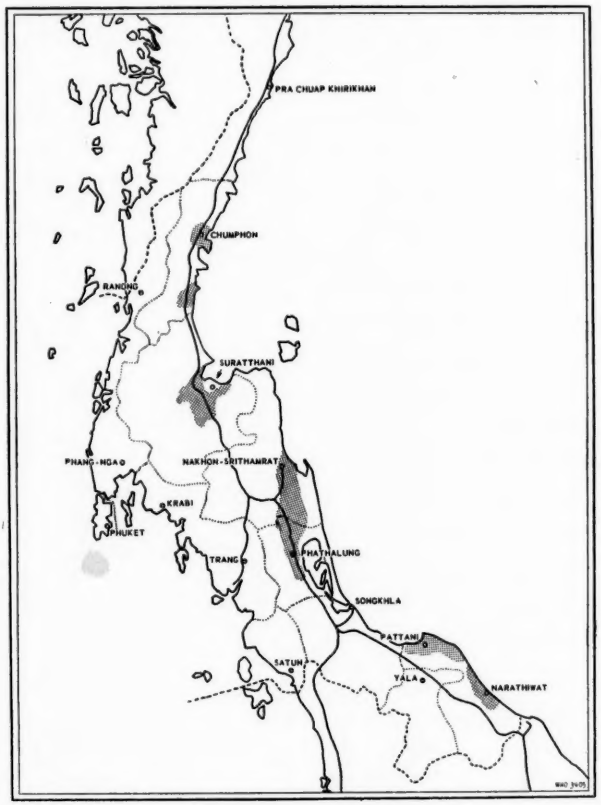
FILARIASIS IN THAILAND

Filariasis is an important public-health problem in Thailand. It is endemic in the flat plains of the eastern coastal region of peninsular Thailand (see fig. 1), an area of approximately 2,200 square miles (about 5,700 km²) inhabited by a population estimated at 80,000—nearly one-twentieth of the total population of the country.

At the request of the Government, WHO provided the services of a consultant, M. O. T. Iyengar, to make an investigation of the filariasis problem and to suggest suitable control methods.[1] A report on his investigation has appeared in a recent number of the *Bulletin of the World Health Organiza-*

[1] A report on an investigation of filariasis in the Maldive Islands, prepared by the same author, was published in *Bull. Wld Hlth Org.* 1952, 7, 375; see also *Chron. Wld Hlth Org.* 1953, 7, 118.

FIG. 1. SOUTHERN THAILAND, SHOWING AREAS OF ENDEMIC FILARIASIS



The shaded areas are those in which the investigation showed filariasis to be endemic.

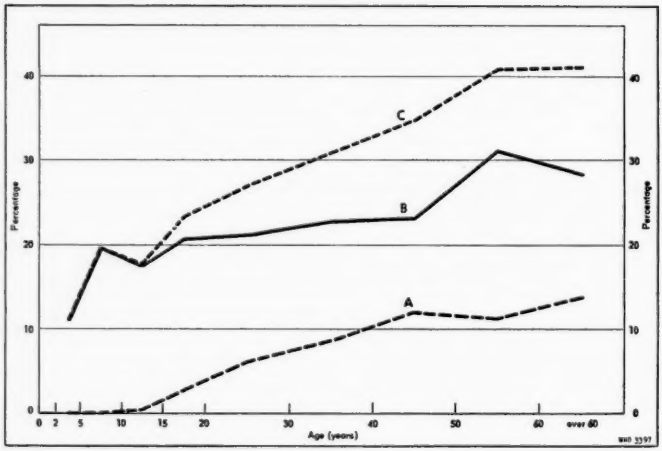


FIG. 2.
FILARIAL-DISEASE RATE, FILARIAL-INFECTION RATE, AND FILARIAL-ENDEMICITY RATE, BY AGE, IN THAILAND — 1951-2

A = *filarial-disease rate per 100 persons examined*
B = *filarial-infection rate per 100 persons examined*
C = *filarial-endemicity rate per 100 persons examined*

tion,[2] from which the following summary is drawn.

Out of 4,112 persons examined (i.e., by microscopic examination of peripheral blood drawn in the evening), 863 were found to be positive for microfilariae, giving a gross infection-rate of 21.0%. All the microfilariae belonged to the species *Wuchereria malayi*, with the exception of one case of imported infection which was attributed to *W. bancrofti*. The number of microfilariae in the positive blood smears ranged from 1 to 600; in nearly 48% of the cases, it was between 1 and 10.

Two hundred and fifteen persons among the 4,112 examined had filarial disease. Clinical manifestations were as follows: elephantiasis of one leg, 109; of both legs, 95; of one leg and both arms, 1; of both legs and one arm, 7; of both legs and both arms, 1; and hydrocele, 2. Apart from the two cases of hydrocele, no genital affections were noted; it is known that genital affection is very unusual in filariasis caused by *W. malayi*.

The investigation confirmed findings in other parts of the world to the effect that the incidence of demonstrable filarial infection, as indicated by the presence of microfilariae in peripheral blood, is much lower in persons with filarial disease than in those without it, as is shown by these data from endemic areas in southern Thailand:

	Number examined	*Number positive for microfilariae*	*Infection-rate (%)*
Persons with filarial disease	215	9	4.2
Persons without filarial disease . .	3,897	854	21.9

Filarial infection occurs even in the age-group 2-5 years, in which the infection-rate was found to be 10.9%. The rate increased to 19.6% in the group 6-10 years and continued to rise gradually, with a flattening-out of the curve in the higher age-groups. The filarial-disease rate, on the other hand, was zero in the first two age-groups; in the group 11-15 years, it was 0.3%, and then rose steadily to reach its highest level, 13.7%, in the age-group above 60. These trends, together with the filarial-endemicity rate, which is based on the combined data, are illustrated in fig. 2.

[2] *Bull. Wld Hlth Org.* 1953, 9, 731

Sixty-four species of mosquito were collected in the investigation, some of them for the first time. Nine of these species (four of *Mansonia* and five of *Anopheles*) transmit filarial infection. Their breeding-places are found in marshes and depressions in the vicinity of villages. Larvae of the different species of *Mansonia* are known to attach themselves to roots of aquatic plants. Little is known about the breeding habitats and biology of some of the vector species.

Filariasis is essentially a rural disease in Thailand and is prevalent where the population is least dense; the endemicity seems to decrease as the density of the population increases. Swamps which never dry up and small, permanent water collections favour filarial endemicity; infiltrations of salt water —i.e., by tidal creeks—diminish it.

Filariasis control may take several forms. Treatment of water collections with larvicides would not be economical; the control of aquatic vegetation would be both difficult and expensive and would affect only the species *Mansonia*; reclamation or drainage of marshes and other water collections would also be difficult and costly. Chemical prophylaxis of the population through systematic treatment with certain piperazine drugs, although it would present formidable problems and would be expensive, might be considered as an adjuvant measure. The best control method, according to Dr. Iyengar, would be the application of residual-action insecticides to destroy the adult mosquitos. Spraying twice a year, once during June-July and again during December-January, with 200 mg of DDT per square foot (approximately 2.2 g per m^2)—possibly in conjunction with malaria-control spraying campaigns—could considerably reduce the number of mosquito vectors and thus protect the population of Thailand against filariasis, though it would require many years for the benefits of this and other control measures to be fully realized.

Recent Statistical Publications

Two recently issued numbers of the *Epidemiological and Vital Statistics Report* contain data on mortality from various causes. The first, *Mortality from selected causes in some countries in 1952, according to sex and age*,[1] comprises tables on deaths from tuberculosis, malignant neoplasms, diabetes mellitus, pneumonia, bronchitis, cirrhosis of the liver, nephritis and nephrosis, accidents, suicide, and complications of pregnancy, childbirth, and the puerperium. The second,[2] which deals solely with maternal mortality, presents in tabular form the actual numbers and rates of maternal deaths in selected countries since 1936-8, and then a breakdown of the data for 1949-51 (in most of the countries studied) by causes as given in the International Abbreviated List of 1948, and according to the intermediate and selected detailed headings of the International List of 1948.

A third report,[3] contains statistics for the past few years on cases of, and deaths from, diphtheria, infectious hepatitis, cerebrospinal meningitis (meningococcal), and poliomyelitis in a number of countries.

A fourth [4] gives the numbers, rates, and seasonal distribution of mortality from gastritis, enteritis, and colitis in the world. The same report lists the number of cases of and deaths from cholera, plague, smallpox, relapsing fever, influenza, and malaria for 1953 and part of 1954.

[1] *Epidem. vital Statist. Rep.* 1953, **6**, 321
[2] *Epidem. vital Statist. Rep.* 1954, **7**, 37
[3] *Epidem. vital Statist. Rep.* 1954, **7**, 85
[4] *Epidem. vital Statist. Rep.* 1954, **7**, 133

MATERNAL AND CHILD HEALTH IN SOUTH-EAST ASIA*

The World Health Organization started its work as a specialized agency of the United Nations on 7 April 1948. In December of the same year, the Organization opened its first regional office, that for South-East Asia, at New Delhi.

The task facing this regional office was challenging and enormous. Stated in general terms, it was to assist the governments of the six countries in the Region (Afghanistan, Burma, Ceylon, India, Indonesia, and Thailand [1]) to improve the health of peoples totalling 500 million, of whom 80% live in rural areas. In all the six countries one could find examples of the rule that poverty leads to poor health and poor health to poverty; and in all of them low per caput income was combined, in varying degrees, with high infant and maternal death-rates and high birth-rates. A general shortage of doctors, nurses, and auxiliary health personnel was also universal.

The urgent needs of the Member countries represented such a challenge that the Regional Office for South-East Asia could not afford to spend too much time on details of organizational planning or on surveys. It chose to act immediately and to learn by experience. However, action had to be adjusted to financial limitations.

With the modest amount of money that it had at its disposal, the regional office alone would certainly not have been able to accomplish very much in the field of maternal and child health. But here the countries and the regional office received the assistance of another member of the United Nations family—the United Nations Children's Fund (UNICEF).

Close co-operation between WHO and UNICEF has been developed, with the following division of functions: WHO is responsible for the technical aspects of the work and for providing international personnel, while UNICEF furnishes supplies and equipment. Since its inception in 1946, UNICEF has allocated US $17.4 million to South-East Asia; of this total, 40% has been for maternal and child health projects in co-operation with WHO.

It is a basic principle of both WHO and UNICEF to help governments only in their own efforts to improve their health services. Therefore, in most of the WHO/UNICEF-assisted maternal and child health projects, the government contribution, in terms of money, often exceeds the combined contributions of WHO and UNICEF.

Although WHO fully realizes that mothers and children form the most vulnerable group of the world's population and therefore need special care, it has always been the Organization's policy to consider maternal and child health as an indivisible part of general public health. For example, in a country with a high incidence of malaria, it would not be practicable to start special services for mothers and children unless first, or simultaneously, malaria was brought under control. Malaria, tuberculosis, yaws, worm infestations, and malnutrition claim most of their victims among children. Therefore, practically any health activity has a more or less direct bearing on the health of children, and maternal and child health programmes have to be integrated with comprehensive health-improvement efforts in order to be effective. For this reason WHO's activities

* This is drawn from an article, by Dr. G. Mettrop, Regional Maternal and Child Health Adviser, which appeared in the May 1954 issue of *Social Welfare*, the monthly journal of the Indian Central Social Welfare Board.

[1] Nepal has since been added, having become a Member of WHO in 1953.

in maternal and child health are based on simultaneous efforts to strengthen the general health services of the countries and to deal with first priorities first. Two other major considerations are that " prevention is better than cure " and that, among the population to be served, four out of every five persons live in rural areas.

In order to reach as soon as possible the millions of mothers and children living in rural areas, the first and most basic need is for more personnel. In some parts of South-East Asia, there is only one nurse available for every 40,000 of the population. There are midwives facing the impossible task of serving an entire area with a population of 50,000, countries in which there are more doctors than nurses, and even hospitals with more doctors on their staffs than trained nurses—a situation comparable to an army with more officers than soldiers. It is because of this need for more and better-trained personnel that, at the request of the governments in the Region, WHO, in close co-operation with UNICEF, is giving help in maternal and child health mostly in the form of training and demonstration projects.

Such projects have been started in Afghanistan (one in 1950), Burma (two in 1951), Ceylon (one in 1951), India (one in 1950), Indonesia (one in 1951), and Thailand (two in 1951). While some of these projects are coming to an end in 1954, five new ones are to begin in India.

These eight projects follow basically the same pattern, although there are some variations owing to adjustments to local needs and conditions. Their first and most important objective is to train more personnel and to train them better. Those who receive training include doctors, nurses, health visitors, midwives, and, in many instances, auxiliary health workers, such as assistant nurses and midwives and indigenous midwives (dais). Most of the training is on the undergraduate level, but postgraduate instruction (e.g., in-service training and refresher courses) also forms part of nearly every project.

WHO provides for these projects international personnel, numbering from two to eight but usually about five or six. The governments provide national counterparts to each of the international team members, and as soon as possible the national personnel take over the work of the international team and continue it after the latter has been withdrawn.

One of the most comprehensive of the projects is that which was begun in Burma, originally in conjunction with a venereal-disease-control programme. At two maternal and child health centres, extensive services have been given; and the work has offered a means of training various types of personnel. In Kabul, Afghanistan, schools for the training of midwives and nurses have been started, and a new maternity hospital is in operation. Training and demonstration centres for maternal and child health are also included in the project, and expansion to rural areas is envisaged—this in a country in which, owing to the strict purdah system, hardly any female health worker was previously available. In Ceylon, a training project in paediatric and maternity nursing has been completed. In India, the maternal and child health project in a village near New Delhi has become an important and practical training field. In Indonesia, the co-operation of the Government, WHO, and UNICEF has led to a rapid increase in the numbers of available personnel, mainly midwives and home visitors, who are to staff maternal and child health centres. In Thailand, projects established in Bangkok and Chiengmai have stimulated the development of maternal and child health activities throughout the country.

WHO has awarded fellowships in all these countries in connexion with the maternal and child health projects, so that national personnel could broaden their experience and

thus be fully qualified to take over the work of the international teams.

Maternal and child health is not a domain in which quick results can be shown. Nevertheless, it is gratifying to note that the combined efforts of the governments, WHO, and UNICEF have had effects reaching beyond the localities in which demonstration and training projects have been situated. Much remains to be done. But there is every reason to expect that, with the continued support of UNICEF, WHO will be able to do even more in the future to help the governments of the South-East Asia Region to improve the health of mothers and children.

Reports of Expert Groups

THE MENTALLY SUBNORMAL CHILD

A recently published WHO technical report [1] summarizes the discussions of a joint committee (United Nations, ILO, UNESCO, and WHO) convened to examine the problems posed by the mentally subnormal child. These problems are many and complicated and require different public services to aid in their solution. Four main services are considered in the report: medical, educational, vocational and employment, and social welfare. Adequate assistance to the mentally subnormal child and his family, or family substitute, can be given only within the framework of all these services; and the special needs of the mentally subnormal should receive attention as part of the larger effort embraced by the work of the relevant agencies.

The report emphasizes the importance of preventive and remedial measures in childhood; through proper and timely action, problems which might lead to difficulties in adulthood can be avoided. The first responsibility rests with the public-health services. Once diagnosis or discovery is made, several steps should be taken: the cases should be referred to the proper authorities and specialist collaboration sought if warranted; the parents should receive help and advice; and a decision should be made as to whether the child can be cared for at home or should be placed in an institution or foster-home.

The various types of provision for the care of mentally subnormal children are dealt with in some detail in the report. Preference for home care is expressed:

"As a general rule, home care is to be recommended unless the subnormality is very severe or the retention of the child in the home is likely to bring about serious maladjustment or the dislocation of other aspects of family life. Even children who are severely subnormal may be kept at home if the parents are able to take a realistic view of the situation and if they are able to make full use of comprehensive maternal and child health services. Moreover, generous financial and practical assistance to parents is still cheaper than hospital care, a point not often realized."

When the mentally subnormal child reaches school age, he becomes the responsibility of the educational authorities, just as does the normal child. The report states that "no artificial barriers should be erected between normal children and those for whom special provision has to be made". Successful development of subnormal children, within the limitations imposed by their handicaps, is dependent upon special teaching methods, modified curricula, and much more personal

[1] *Wld Hlth Org. techn. Rep. Ser.* 1954, 75. 46 pages. Price: 1/9, $0.25, or Sw. fr. 1.—. Published in English and in French.

attention from the teacher than is required by normal children. Because of the last, it is most important that classes be small. The teacher's task is " difficult and delicate ", and she " needs the fullest support from the social, psychological, and medical services, working as an integrated team ".

The mentally subnormal adolescent and young adult presents a problem for vocational and employment services. Studies made since the second World War have shown that, if jobs are available and the necessary assistance is given, the majority of those whose subnormality is mild can find and keep work. As the report points out, " There are, in fact, many occupations in an industrial society which subnormal individuals, properly and carefully placed, can perform". Specific suggestions regarding vocational guidance and training are included in the report. The social needs of subnormal adolescents are also considered, particularly from the standpoint of leisure-time activities.

Other subjects discussed in the report are the training of personnel for work with the mentally subnormal, parent and public education, and legal considerations relative to the mentally subnormal. The imperative need for further research on all aspects of subnormality is stressed.

Governments are urged to provide the necessary aid for children with physical or mental handicaps and to co-ordinate the various services so as to allow for the fullest possible development of these children. With regard to the mentally handicapped in particular, the report points out that " the prevalence of mental subnormality is such that in all countries its social costs are high ", and that " there are therefore few societies which cannot afford to provide some services for the mentally subnormal ".

PUBLIC-HEALTH ADMINISTRATION

The second report of the Expert Committee on Public-Health Administration [1] has as its subject " Methodology of planning an integrated health programme for rural areas ". The nucleus of the rural health service of any area, according to this report, should be a local health unit, " an organization providing, or making accessible, under the direct supervision of at least one physician, the basic health services for a community ". Within this unit may be health centres and sub-centres as required—places where the appropriate services may be given.

Considerable attention is devoted in the report to an analysis of the health services that should be rendered by intermediate and higher health authorities as distinct from those that are within the province of local units. For example, specialist services, hospitals, statistical studies, research and field investigations, and co-ordination of the activities of smaller divisions are among the services which should be the responsibility of the former; mental health and nutrition are particularly singled out as well, since they can be dealt with at the local level to only a limited extent.

The basic services that should be provided by a local health unit are indicated in the diagram on the following page, which also shows the organization of such a unit and its relation to the intermediate and higher health authorities.

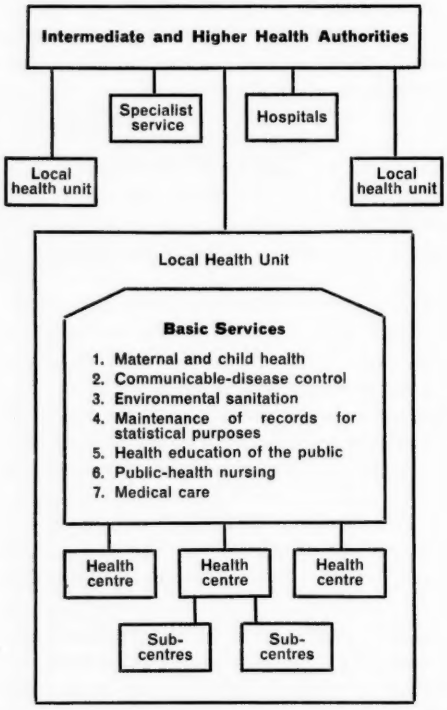
The report sets forth in some detail the functions of the local health unit with regard to each of these services. Other topics include personnel for local health work, the planning

[1] *Wld Hlth Org. techn. Rep. Ser.* 1954, 83. 46 pages. Price : 1/9, $0.25, or Sw. fr. 1.—. Published in English and in French.

of integrated local health programmes, and the cost and financing of such programmes. An annex gives a description of an integrated health service adopted by the Indonesian Government for the Bandoeng Regency, which corresponds to a large rural area.

This report emphasizes the need for developing programmes based on local health units, though it stresses, too, the fact that " a health service is only one aspect of planning at the local level for the welfare of the community ", since " basic requirements in agriculture, education, social betterment, and economic stability " must also be considered.

THE ORGANIZATION OF A LOCAL HEALTH UNIT AND ITS RELATION TO THE INTERMEDIATE AND HIGHER HEALTH AUTHORITIES



PROGRESS IN MALARIA CONTROL

" The Second World Health Assembly resolved to work for the elimination of malaria from the world as a public-health problem. At the time, this aim seemed to many to be beyond the possibility of achievement, but a review of the present situation shows that very material progress towards it has been made." This statement is an introduction to the fifth report of the Expert Committee on Malaria,[1] which records this progress and also draws attention to problems still to be solved. Much of the credit for the advances that have been made is attributed by the committee to the efforts of WHO, through its demonstration teams, training projects, conferences, fellowships, and stimulation of research.

Malaria control by insecticides

It is pointed out in the report that there is great variety in the doses, and frequency of applications, of residual insecticides used in current malaria-control spraying, and that local experimentation is desirable before undertaking any major control scheme. The main criterion of efficiency of the insecticide is its continued presence on treated surfaces in a form easily picked up and retained by insects that settle on them. Observations concerning specific insecticides and dosages are made, consideration being given to present knowledge—or, in some cases, lack of knowledge—regarding various formulations and their " staying " properties and effectiveness on certain surfaces. Mud walls, which are common in many malarious areas,

[1] *Wld. Hlth Org. techn. Rep. Ser.* 1954, **80**. 42 pages. Price : 1/9, $0.25, or Sw. fr. 1.—. Published in English and in French.

present special difficulties and are under study.[2] The need for investigation of certain aspects of malaria control is noted—e.g., entomological studies, and research on the physical and chemical properties of insecticides, their interaction with wall surfaces, and their mode of action on insects.

The development of resistance to insecticides by anophelines has been reported in two areas : *A. quadrimaculatus* has developed some resistance to DDT following prolonged larvicidal practice in the USA, and *A. sacharovi* has developed resistance, after imagocidal work, occasionally combined with larvicides, in Greece. On the other hand, there are many large areas where there has been no apparent development of resistance in malaria vectors despite continued use of residual insecticides for periods of up to eight and nine years. It is concluded in the report that, although this subject merits study, the resistance thus far encountered does not constitute an important barrier to malaria control and should not deter governments from undertaking control programmes. However, it is stated that accurate measurements of the susceptibility of anophelines to insecticides should be made before, and periodically during, major control schemes; and a suitable technique for assessing susceptibility is described in an annex to the report.

Another interesting and significant development is the reported successful interruption of residual insecticide spraying in British Guiana, Greece, and the USA. " Experience now clearly shows that the objective of malaria elimination to a degree when routine insecticide application can be ended is a feasible one." It is necessary to establish certain criteria for determining when " full elimination " has been achieved—the endpoint that makes it possible to discontinue spraying operations. By way of general guidance, there is reproduced in an annex to the report the " criteria of malaria eradication " established by the National Malaria Society of the USA. Once a policy of interruption of spraying activities has been decided upon, it is essential to maintain certain safeguards, chiefly to ensure rapid detection of recurrence of malaria and to eliminate it promptly.

Note is taken in the report of the study on the toxicity of pesticides which was made by a WHO consultant and the results of which have been published in the Monograph Series.[3] Both DDT and BHC are considered safe, and new insecticides which laboratory trials have shown to have a toxicity of the general order of these two " may justifiably be brought into routine use with reasonable precautions ".

Malaria control by methods other than residual insecticides

Preoccupation with the efficacy of residual insecticides may detract from the necessity to employ other methods under particular circumstances. For example, prevention of breeding remains the method of choice for combating malaria carried in some areas by the *Kerteszia* group or by *A. melas* or *A. squasalis*. Environmental sanitation plays an important role, particularly when it can eliminate or prevent the creation of breeding-places of mosquitos. In addition, supplementary measures, such as " selective therapeutic schemes ", to support imagocidal campaigns may sometimes be desirable.

Chemotherapeutics of malaria

In a section on therapy, the report considers the two most important newly developed antimalarial drugs : pyrimethamine (Daraprim) and primaquine. The former is an effective suppressant in all forms of malaria

[2] See, for example, *Bull. Wld Hlth Org.* 1953, 9, 39.

[3] Barnes, J. M. (1953) *Toxic hazards of certain pesticides to man*, Geneva (*World Health Organization : Monograph Series* No. 16)

and is likely to be most useful in prophylaxis, especially in mass prophylaxis since the suppressive dose for adults is only 25 mg weekly, which makes it relatively inexpensive. Primaquine, which is more effective and less toxic than pentaquine and isopentaquine, has been used with success for the radical cure of vivax infections in troops returning from Korea.

It is noted that the newly synthesized antimalarials may have special value in malaria control in the following circumstances :

(1) where any factor precludes the application of antimosquito measures or renders the response to them unsatisfactory;

(2) where residual spraying has been discontinued but there is still need to deal effectively with relapsing cases or infected immigrants; or

(3) where malaria has appeared in an epidemic form.

A review of the current status of the antimalarial drugs now in use is contained in an annex to the report.

Recent scientific developments

The report calls attention to three new scientific developments in malariology : the isolation of *Plasmodium berghei* and of *P. vinckei*, which may aid in the study of problems of exo-erythrocytic schizogony, immunity, experimental epidemiology, and chemotherapy; a new method of chromosome analysis,[4] which may prove valuable in the classification of anophelines; and the observation—in Sardinia, the Pontine Marshes, Greece, and the Jordan Valley—of changes in anopheline fauna following successful control, a phenomenon which could have practical implications and which deserves study.

International malaria-control activities

The need for further international co-ordination of malaria control is envisaged since the successful elimination of malaria from one country—which might make possible the interruption of spraying operations —could be jeopardized by lack of comparable control efforts in neighbouring countries and consequent risk of re-infection.

> " The ideal to be aimed at is the uniform practice of control throughout all malarious parts of a [WHO] region, or throughout large contiguous areas with similar malarious conditions even though they fall into two or more national territories or WHO regions. For this purpose, co-ordination of control in method, timing, and boundaries would first be necessary, while later, close integration would be necessary in interruption of control and subsequent practice of safeguards against recurrences."

[4] See *Bull. Wld Hlth Org.* 1953, 4, 335.

BIOLOGICAL STANDARDIZATION

New international standards have been established and new international units defined by the Expert Committee on Biological Standardization. The report on its seventh session, which has recently been published,[1] gives the unitage assigned to one international unit of anti-*Brucella abortus* serum, of aureomycin, of bacitracin, and of dihydrostreptomycin; unitage for the international reference preparation for opacity is indicated as well. This publication also contains information on certain standard preparations (anti-Q-fever serum, chloramphenicol, oxytetracycline, avian PPD, and anti-Rh_0 (anti-D) blood-typing serum); on the replacement of standards or of reference preparations; and on progress in work on diphtheria toxoids, pertussis vaccine, antirabies

[1] *Wld. Hlth Org. techn. Rep. Ser.* 1954, 86. 22 pages. Price : 1/9, $0.25, or Sw. fr. 1.—. Published in English and in French.

vaccine, cholera sera and vaccines, certain hormones, and sera from syphilitic donors. Accelerated degradation tests for stability of standard preparations are going to be actively studied.

The committee considered a resolution of the 15th International Veterinary Congress that it should extend its activities relative to international standards for veterinary substances. In addition, because of the increasing importance of international standards in medicine and public health, the committee formulated precise suggestions concerning the status and functions of National Control Centres and proposed that they be called " National Laboratories for Biological Standards ".

FIRST INTERNATIONAL CONFERENCE OF NATIONAL COMMITTEES ON VITAL AND HEALTH STATISTICS

The report of the First International Conference of National Committees on Vital and Health Statistics has been published in the *World Health Organization : Technical Report Series*.[1] This conference, which has been the subject of a previous *Chronicle* article,[2] " reviewed the antecedents, objectives, patterns of organization, and programmes of work carried out by the national committees on vital and health statistics or equivalent bodies", and "discussed the progress already made and the possibilities for their work, and the important role which they might play for the development of vital and health statistics ".

In the conference report are considered separately the type of vital and health statistics which would be of the greatest practical value to areas in different degrees of development with regard to health and administrative services. These areas are classified in three groups : (*a*) those with highly developed health and statistical services, (*b*) those with underdeveloped health and statistical services, and (*c*) those in an intermediate stage of development or of unequal development. Specific recommendations and suggestions are made for the statistics of each of these three groups.

One major section of the report outlines methods of improving the quality of health statistics. For example, the possible advantages of applying modern sampling techniques on a wider scale are noted. Such techniques " cannot be expected to solve all the problems of vital and health statistics ", but " nevertheless offer a means of obtaining reliable statistical information, in many cases more cheaply and more quickly than by conventional methods ". Attention is drawn to the importance of giving instructions to medical practitioners on the proper certification of death, of training personnel for statistical work, and of securing wider appreciation by the medical profession for various types of vital and health statistics. The activities of the WHO Centre for Classification of Diseases are briefly reviewed.

The final section of the report is devoted to the subject of implementation of international regulations or recommendations, such as WHO Regulations No. 1[3] and WHO definitions of " live birth " and " foetal death ".[4] The United Nations document

[1] *Wld Hlth Org. techn. Rep. Ser.* 1954, 85. 22 pages. Price : 1/9, $0.25, or Sw. fr. 1.—. Published in English and in French.
[2] *Chron. Wld Hlth Org.* 1954, 8, 7
[3] *Off. Rec. Wld Hlth Org.* 13, 349
[4] *Wld Hlth Org. techn. Rep. Ser.* 1950, 25, 13

Principles for a vital statistics system[5] is endorsed as "an aid to countries now in process of organizing or reorganizing their vital statistics system, as well as to countries appraising their systems with a view to improving the quality and comparability of their existing statistics".

[5] United Nations, Department of Economic Affairs, Statistical Office (1953) *Principles for a vital statistics system. Recommendations for the improvement and standardization of vital statistics*, New York (Document ST/STAT/SER/M/19)

DRUGS LIABLE TO PRODUCE ADDICTION

In its most recent report,[1] the WHO Expert Committee on Drugs Liable to Produce Addiction specifies several new synthetic substances that should be considered addiction-producing drugs and controlled accordingly. *N*-allynormorphine (nalorphine), on the other hand, cannot be considered as addiction-producing or capable of being converted into an addiction-producing drug. It seems important that there should be no restrictions in obtaining this drug, which is the most potent and safe antidote against acute poisoning with morphine and related drugs. Dextrorphan and dextromethorphan should also be exempted from the obligations of the international conventions on narcotic drugs, because it has been proved that, contrary to their laevogyre isomer and racemic form, they are neither addiction-producing nor convertible into such a substance. This recommendation is of fundamental character since it is the first time that a substance formerly put under international control according to the 1948 Protocol has later been exempted.

Among other conclusions reached by the committee and recorded in this report are that there should be no relaxation in the control of codeine or of ethylmorphine, in view of the possibility of their conversion into morphine; that morphine retard preparations must be handled and controlled exactly as are other preparations of morphine; and that control over amphetamine and its derivatives should be strengthened on the national level. It is recommended that the procedure of characterizing morphine and related alkaloids on the basis of the phenanthrene nucleus be continued.

An annex to the committee's report contains a list of proposed international non-proprietary names for addiction-producing drugs under international control.

[1] *Wld Hlth Org. techn. Rep. Ser.* 1954, **76**, 11 pages. Price: 1/9, $0.25, or Sw. fr. 1.—. Published in English and in French.

League of Nations Health Publications Available

Certain publications of the Health Organization of the League of Nations are available free of charge to university and medical libraries willing to pay the cost of mailing. A list of these publications may be obtained upon application to: Distribution & Sales Unit, World Health Organization, Palais des Nations, Geneva, Switzerland.

Review of WHO Publications

LABORATORY TECHNIQUES IN RABIES

Among the publications recently issued by WHO is a monograph containing a number of contributions by distinguished research workers on various aspects of laboratory techniques in rabies.[1] The following slightly altered version of the foreword to this manual gives an idea of its contents :

The World Health Organization has in the past received many requests for information on laboratory techniques connected with various aspects of rabies. As a result of the need for this kind of information in countries of the Eastern Mediterranean, South-East Asia, and Western Pacific Regions of WHO, a meeting was organized for these countries in July 1952 at the Pasteur Institute of Southern India in Coonoor. The meeting provided for lectures, discussions, demonstrations, and laboratory training, and was attended by 55 medical and veterinary officials, including 7 discussion leaders, from 23 different countries. WHO consultants on rabies acted as discussion leaders and supervised the laboratory session. The working papers, in particular the laboratory instructions prepared by well-known authorities, proved most useful, and it was decided to expand and revise the material for publication. The WHO Expert Committee on Rabies, at its second session in Rome in September 1953, discussed the projected manual in detail and made frequent references to it in its report. The reports of the committee deal in general with the overall problems encountered in rabies, including prophylaxis in human beings and control in animals, whereas this publication is concerned solely with laboratory aspects of the disease.

The manual is not intended as an exhaustive treatise; its scope has been purposely limited to one or two procedures in each of the major divisions of laboratory techniques in rabies. The contributors were requested to select and present procedures based on their own experience which would be dependable and practicable without sacrificing necessary minimal standards, but which at the same time could be adapted to the limited facilities and personnel of many rabies laboratories in different parts of the world. The techniques were selected also with a view to encouraging and facilitating uniform methods which would permit of a more valid comparison of results obtained in different laboratories.

Certain features of the various sections require some explanation.

Detection of Negri bodies by rapid techniques is the aim of every diagnostic laboratory dealing with rabies, and a choice must be made from a multiplicity of methods described by different authorities. It is believed that the impression method presented here can be mastered relatively easily by most laboratory technicians. Where histopathological sections are concerned, more-specialized training in pathology is required and this part of the manual has been arranged for such trained individuals.

In the laboratory diagnosis of rabies, examination is frequently limited to the tissues of the central nervous system, and the salivary glands are entirely overlooked. It has been aptly stated that " animals do not bite with their brains "—the real risk of contracting rabies is dependent on whether or not virus is present in the saliva of a biting

[1] World Health Organization (1954) *Laboratory techniques in rabies*, Geneva (*World Health Organization : Monograph Series* No. 23) 150 pages. Price : 10/-, $1.50, Sw. fr. 6.—. French edition in preparation.

animal. However, salivary excretion of virus does not occur in an appreciable, but unpredictable, number of cases, where virus can be recovered or detected in the brain of the same animal. Examination of the submaxillary salivary gland for the presence of virus by mouse inoculation should therefore be carried out wherever possible concurrently with nervous-tissue examination.

The necessity for mouse inoculation tests in routine diagnosis is worthy of special emphasis. Careful studies have shown that up to 20% of animals negative on examination for Negri bodies were positive for rabies by the mouse inoculation test.

A description of the preparation of the Semple phenolized type of vaccine, as representative of the most widely used of the " killed " vaccines, is given. This does not imply that other inactivated or living virus vaccines such as the Hempt-, Högyes-, Fermi-, or Harris-type vaccines, to name a few, are not equally effective, provided they are adequately tested for potency. Two methods for producing the Semple-type vaccine are given : one according to the procedure used at the Institut Pasteur, Paris, and the other to meet the requirements of the National Institutes of Health of the United States of America. These methods were chosen because they cover the largest number of requests for information received by WHO. It is recognized that modifications of these methods are used successfully in many countries.

Descriptions of the production of ultraviolet-light inactivated vaccine and modified virus vaccine prepared from chicken embryos are included because of wide interest in these effective and relatively new products. Commercial or large-scale preparation of potent rabies vaccines from which the paralysis-producing factor has been removed has not, as yet, been successfully accomplished, and this procedure is therefore omitted from the manual.

The necessity for performing potency tests on each batch of vaccine cannot be too strongly emphasized, for ample experience has shown that even when routine procedures are closely followed in the preparation of successive batches of vaccine there is no automatic assurance of a potent product. Potency tests in laboratory animals provide our only basis, at present, for any degree of certainty that a vaccine possesses sufficient immunogenicity to give dependable results in human beings or animals. Several potency tests of varying complexity are given so that a laboratory may select, or devise, one most suitable to its local conditions and facilities. In the latter instance, strongest consideration should be given to vaccination followed by challenge with street virus, always with an adequate number of control animals. For this purpose dogs are suitable and can be considered as the animal of choice. The important factor to be demonstrated in control tests of rabies vaccines is immunogenicity and not merely innocuity, a mistake which is not uncommon.

Hyperimmune serum is a promising addition to rabies prophylaxis in man and animals; one part of the manual is devoted to a description of its preparation, and of potency tests. Laboratory investigations on hyperimmune serum now under way, coordinated by WHO, should give us more information within the next year or two on its prophylactic value.

Another part is devoted to some of the more important problems associated with the use in rabies work of small laboratory animals, a frequent source of difficulty in many countries. The section is necessarily brief and touches on only the chief aspects of the subject, in particular, diseases encountered in these animals which might affect experimental results. Further information on this topic, and on material dealt with elsewhere in the manual, may be obtained from the additional reference sources given.

Work with viruses is a highly developed discipline which permits of little latitude if reproducible results are to be obtained. However, it is to be expected that the opinion of individual workers on techniques will differ with respect to details. The techniques recommended have been prepared for particular application in rabies work, although it is evident that some of them, such as the serum-virus neutralization test and the mouse inoculation test, are readily applicable, perhaps with slight modifications, to other virus diseases. It will be noted further that in describing the various techniques a rational and systematic approach has been stressed by the contributors so that errors which might otherwise nullify excellent work may be avoided. An example which may be cited is the advisability of challenging vaccinated animals before, or alternately with, control animals in determining the potency or effectiveness of a vaccine.

Rabies research is far from static, and it is to be expected that modifications of some of the procedures described will be evolved in the rather near future. It is felt, however, that the techniques given in this manual should be suitable for several years to come, as they are the result of extensive and proven experience.

The contributors to the first part of the manual, on laboratory diagnosis, are H. N. Johnson, J. Koprowski, P. Lépine, T. F. Sellers, and E. S. Tierkel; to the second part, on methods of vaccine production, R. Béquignon, K. Habel, M. M. Kaplan, A. Komarov, and P. Lépine; to the third part, on vaccine potency tests, R. Béquignon, K. Habel, G. A. Hottle, M. M. Kaplan, and C. Vialat; to the fourth part, on the production of hyperimmune serum, P. Atanasiu, D. D'Antona, E. Falchetti, H. Koprowski, and P. Lépine. H. N. Johnson contributed the fifth part, on the breeding and care of laboratory animals.

CONTROL OF CEREBROSPINAL MENINGITIS EPIDEMICS

A recent number of the *Bulletin of the World Health Organization* contains a report on an experiment in mass chemoprophylaxis of cerebrospinal meningitis in the Sudan.[1] This report, by Drs A. Macchiavello and Wasfy Omar, of the WHO Regional Office for the Eastern Mediterranean, and Drs M. Amin El Sayed and Khalil Abdel Rahman, of the Sudan Medical Service, Ministry of Health, Sudan, shows the efficacy of sulfonamides or penicillin in controlling epidemics of cerebrospinal meningitis. A résumé of the article follows.

Epidemics of cerebrospinal meningitis have been reported in the Sudan since the end of the last century. From 1949—when the last epidemic cycle started—until 1952, 60,000 cases had been reported.

In the past decade, the fatality rate from cerebrospinal meningitis in the Sudan has decreased from 60%-75% to about 10%, thanks to the widespread use of sulfa drugs. However, from the medical administrative point of view, this disease remains one of the most pressing public-health problems. Mass prophylaxis with sulfa drugs has given satisfactory results in closed communities, such as army camps, schools, and factories, but its effectiveness in protecting large cities or scattered rural populations has not yet been proven.

The role of penicillin in the treatment of cerebrospinal fever is uncertain. Sulfon-

[1] *Bull. Wld Hlth Org.* 1954, **10**, 1

amides are still considered the drugs of choice, and penicillin is not commonly recommended for general use as a therapeutic agent.

The results obtained by the authors show that mass chemoprophylaxis, either with sulfa drugs or with penicillin, is effective in controlling cerebrospinal meningitis epidemics in rural communities, and that the methods that they worked out may, under routine procedures of health administration, be easily applied, even under the most primitive living conditions, such as those in the Nuba Mountains of the Sudan where their experiments were carried out.

Sulfadimidine (trade name : Sulphamezathine) was selected as the mass prophylactic agent because of its rapid absorption; the high, early peak-blood level obtained; the facility with which it diffuses into the cerebrospinal fluid, reaching a concentration approximating half that of the blood level; its low toxicity; the rapidity of excretion; its relatively low price; and the fact that the Sudan Medical Service had a considerable quantity at its disposal. The possible drawbacks that this drug may have when given in a single dose disappear when it is administered in repeated doses.

Penicillin, in the form of PAM and given in a dose of 150,000 units to adults, has an effect comparable to that of a single 4-g dose of sulfadimidine. The fact that penicillin does not pass through the meninges—or at least very little—is immaterial in mass chemoprophylaxis since those being dealt with are meningococcus carriers rather than cerebrospinal meningitis cases.

The experiment proved that it is possible for a team of four medically qualified persons and five trained assistant dressers to deal with 4,000 persons per day. The responsibility for assembling the people for treatment was entrusted to the tribal authorities and was accomplished most efficiently.

The prophylaxis consisted of the oral administration of sulfonamides in the form of tablets of 0.5 g—adults being given 4.0 g, children 5-15 years of age, 2.5 g, and infants under 5 years old, 1.5 g—or of penicillin (PAM)—the respective dosages being 150,000, 100,000, and 75,000 units for the same population-groups.

In a community of 10,394 inhabitants where 293 cases of meningitis had been reported before the experiment began, 5,350 inhabitants were given prophylaxis. Observations made during six weeks showed that the epidemic continued its course but that in the group protected by sulfonamides or penicillin the incidence of the disease was 4.86 per 1,000 persons as compared with 17.68 per 1,000 in the unprotected group—a statistically significant difference. Six weeks after the application of the prophylactic measures, the treated groups, although living in close contact with the unprotected groups, had not been reinfected. Since chemotherapy has no immunizing power by itself, the authors submit the hypothesis that a low-grade immunity can be developed in individuals who were carriers before prophylaxis was administered.

The authors discuss the various factors which enter into the development of epidemics and which must be taken into consideration in evaluating the results of a prophylactic campaign. They stress the fact that the percentage incidence of cases of typical cerebrospinal meningitis may be considered as an expression of the virulence or the invasive power of *N. meningitidis*, but not as a measure of the rate of dispersion of the infection. This means that, in communities where only a few cases of meningitis are reported, there may actually be a widespread epidemic of " unapparent " infection.

Although they may be somewhat difficult to evaluate, the results of the campaign described are not due to chance, and they encourage the extension of the method outlined to prevent the spread of epidemics of cerebrospinal meningitis. The two prophy-

lactic drugs used seem to be of equal efficacy. Penicillin and the sulfonamides can complement each other: one can replace the other in cases in which the meningococcus develops resistance to the first drug used, or if the epidemic recurs. PAM seems to be less expensive than the sulfonamides. But, from a purely scientific point of view, it would appear that sulfa drugs, given in the proper doses, can give good results.

SNAKEBITE MORTALITY IN THE WORLD

To what extent is the mortality from snakebite really a world problem? How many persons are bitten by snakes in different parts of the world and how many of them die?

An attempt to answer these questions has been made in a study [1] recently published by the World Health Organization. This study throws light on the geographical distribution of snakebite mortality in individual countries and also refers to the predominant species of poisonous snakes incriminated. Reliable statistical information on the number of deaths caused by snakebite is not available from large parts of the world, and especially from those so-called underdeveloped areas where snakebite is of relatively greater importance but where the system of registration of causes of death is unsatisfactory. As a matter of fact, in many such areas deaths from snakebite occurring in remote villages and jungles are hardly registered; the only information available is that in relation to cases treated in hospitals or rural medical institutions. Another difficulty in making a correct evaluation of the problem arises from the fact that in the majority of countries snakebite deaths are not separately tabulated in official returns; only totals under such vague headings as "attacks by venomous animals and insects, etc." are shown.

Since the available statistical data are known to be unreliable, only approximate and highly conservative estimates of the relative magnitude of the problem of mortality from snakebite have been made.

The total population of the countries which possess national systems for vital statistics registration and for which snakebite mortality data comparable to the population exposed to risk are available is 1,122 million. On the basis of this figure, the total number of snakebite deaths in the world (excluding China, the USSR, and central European countries) is estimated to range between 30,000 and 40,000 annually. Of this total, the highest figures are those for Asia (25,000-35,000), followed by South America (3,000-4,000). North America (including Mexico), Europe, and Oceania all record relatively low figures—300-500, 50, and 10, respectively. For Africa, however, it is difficult to make even an approximate estimate, but it is thought that the annual total of snakebite deaths is around 400-1,000.

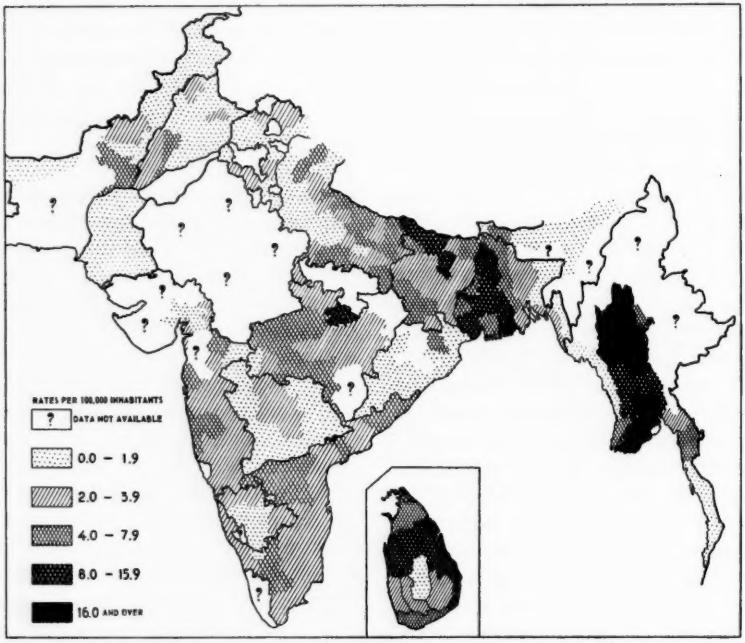
An estimate of the total cases of snakebite is even more difficult to make, but if a guess is to be ventured it may be stated that about half a million persons are bitten annually by poisonous and non-poisonous snakes.

The analysis of snakebite mortality figures has revealed two interesting features: first, that considerable variation exists from one area to another; and, secondly, that high rates are generally found in topographically similar areas, presumably because of the preponderance of certain species of snake in that habitat.

The largest number of deaths is reported from India; but, if proper allowance is made for the size of the population, it is observed

[1] Swaroop, S. & Grab, B. (1954) *Bull. Wld Hlth Org.* **10**, 35

FIG. 3. DISTRIBUTION OF FIVE-YEAR AVERAGE SNAKEBITE MORTALITY RATES IN BURMA, CEYLON, INDIA, AND PAKISTAN *



** The period to which these average rates relate varies to some extent in different areas depending on the availability of the data. Thus, in the case of Ceylon, India, and Pakistan the quinquennium covered ends during the period 1949-52, while the Burma figures are for the quinquennium 1936-40. For Burma, India, and Pakistan the distribution is shown by districts, and for Ceylon by provinces.*

that the highest snakebite mortality rate is recorded in Burma, where in some districts the annual death rate from snakebite exceeds 30 per 100,000 population. The above map, showing the distribution of snakebite mortality in Burma, Ceylon, India, and Pakistan, indicates that the districts in Burma showing highest mortality from snakebite are those situated in the low-lying areas of the Irrawaddy and Chindwin Rivers.

Although poisonous sea snakes are found in the Bay of Bengal and may come up the rivers with the flood tides, it is believed that they do not constitute a great hazard to man. Cobras, vipers, or kraits are the terrestrial snakes widely prevalent in Burma, and they largely account for the mortality. The same species of snakes are the ones most dangerous in Ceylon.

The region of highest snakebite mortality in India lies in West Bengal in the delta of the Ganges. It is noteworthy that the neighbouring districts along the Bramaputra river, even in its deltaic region, do not show such a high snakebite mortality rate as do the districts lying in the Ganges delta. In India, cobras, kraits, Russell's viper, and *Echis* are the commonest types of poisonous

terrestrial snakes and are responsible for practically all the snakebite deaths in the country.

In the countries of Central and South America, the common genera of poisonous snakes are *Crotalus* and *Bothrops*.

The African continent has a wide variety of poisonous snakes, of which the cobras and vipers are the most widely distributed and are responsible for the largest number of deaths. Several species of the dangerous mambas are also present.

Since poisonous snakes are not generally found in cold climates, the mortality from snakebite is very low in countries of North America and Europe. Land-dwelling poisonous snakes are not found in the Polynesian Islands, Madagascar, New Zealand, the Azores, the Canary and Cape Verde Islands, or (with the exception of Martinique, St. Lucia, Tobago, and Trinidad) the West Indies. Thus, they do not occur in Haiti, Cuba, Jamaica, and Puerto Rico. They are also absent in Ireland, Iceland, the Orkneys, and the Shetlands.

The incidence of snakebite mortality depends, of course, on the chance of a person's being bitten by a poisonous snake, which naturally is related to the number of prevalent poisonous species of snake and other factors which would contribute to the individual's coming into contact with them.

ENVIRONMENTAL SANITATION

The latest issue of the *Bulletin of the World Health Organization* [1] is devoted to the subject of environmental sanitation, the papers published therein being among those submitted to the WHO expert committee on this subject or presented at European seminars on sanitary engineering. Some of the former selections have already been summarized in the *Chronicle* [2] (e.g., those by M. Derryberry, M. D. Hollis, L. Pachón-Rojas, and W. R. Sanchez and E. G. Wagner). The background information for this special *Bulletin* and comments on a number of the other articles which it contains are found in the following introduction :

> The importance of environmental sanitation as an ally of other branches of public health in the control of preventable diseases is now recognized by health officials in most parts of the world. During the past few years many governments have taken steps to create environmental-sanitation services within their administrative machinery and to train qualified personnel to carry out sanitation work. This movement, to which WHO is contributing largely, is gaining increasing momentum, especially in the underdeveloped regions of the world where the bulk of the population lives under rural conditions.
>
> It is generally agreed that the principles of sanitation apply to both urban and rural problems, although the conditions encountered may differ widely in kind and in complexity. Even in the more advanced countries, health and sanitation services in rural areas have generally lagged behind those in urban areas. In recent years, there has been increasing pressure, particularly in the underdeveloped nations, for bettering the rural sanitary environment. In July 1953, the Expert Committee on Environmental Sanitation of WHO met to study sanitation problems of rural areas and small communities and to make recommendations for improvements applicable in most parts of the world. . . . [3]
>
> Since November 1950, there have also been three seminars for European sanitary engineers, sponsored by the WHO Regional Office for Europe and covering an extremely wide range of subjects. The first, held in 1950 in The Hague, was attended by representatives from 16 countries who submitted reports on sanitary-engineering practices and problems in those countries. The second seminar, held in Rome in

[1] *Bull. Wld Hlth Org.* 1954, 10, No. 2

[2] *Chron. Wld Hlth Org.* 1954, 8, 13

[3] *Wld Hlth Org. techn. Rep. Ser.* 1954, 77; see also *Chron. Wld Hlth Org.* 1954, 8, 146.

1951, was limited to fewer subjects, and more time was devoted to discussions and an exchange of views on problems in the different countries. The third was held in London in 1952 and the participants considered a problem of great interest and concern in many European countries—the treatment and disposal of domestic sewage from small groups of houses and isolated dwellings. As an outgrowth of the discussions at this seminar, WHO published in 1953 a monograph entitled *Design and operation of septic tanks*,[4] in which recent developments and applied research are discussed. . . .

In [one of the papers in this number of the *Bulletin*] K. E. Jensen draws attention to the risk of infection from the presence of tubercle bacilli in sewage from towns with tuberculosis sanatoria.

The health hazards accompanying the utilization of sewage in agriculture are discussed by G. Mazzetti, who concludes that the risks can be minimized, though not eliminated, by modern methods of sewage treatment. Many small towns and parts of large cities have found it practical and economical to dispose of their sewage by putting it to agricultural use, but few have so far taken adequate steps to safeguard the health both of the farmer and of the urban consumer of raw vegetables produced on sewage-irrigated land. M. Petrik reviews the agricultural use of night-soil, sewage, and sewage sludge from the purely agricultural point of view as well as from the sanitarian's. He reviews a number of studies and experiments made in many countries of the world but concludes that the chemistry, biology, and bacteriology of the various methods of treatment and use of waste matter need further investigation. . . .

F. B. Sentenac discusses in an informative paper the vexed problem of financing sanitary works, showing how a number of countries have solved it, or have tried to solve it, and putting forward a number of constructive suggestions.

Finally, some 16 shorter contributions dealing with various aspects of environmental sanitation have been included in the section *Notes and Reports*.

[4] World Health Organization (1953) *Design and operation of septic tanks*, Geneva (*World Health Organization: Monograph Series* No. 18)

Obituary

MARCEL WANSON

Information has just been received of the death, which took place suddenly at Berchem-Antwerp, of Dr. Marcel Wanson, former Deputy Chief Medical Officer of the Belgian Congo, Professor at the Institute of Tropical Medicine, Antwerp, lecturer at the Université libre, Brussels, and member of the Royal Belgian Colonial Institute.

Dr. Wanson was born in 1905 and spent from 1932 until after the war as a public-health officer engaged in the study of various problems of tropical medicine, notably the insect-borne diseases. Filariasis and, especially, onchocerciasis earned his particular attention, and through his work in this field he became recognized as one of the most eminent specialists of our time. His brilliant success in the control of *Simulium*, the vector of onchocerciasis, in the Leopoldville region was one of the first demonstrations of control of this disease, which is a great social problem in many areas of tropical Africa and America.

Keenly interested in the latest scientific achievements and always ready to share his invaluable knowledge, Professor Wanson attended several international congresses of tropical medicine, and since 13 December 1951 his collaboration with WHO as member of the Expert Advisory Panel on Parasitic Diseases had been greatly appreciated. His profound knowledge and experience contributed in large measure to the success of the first session of the newly-formed Expert Committee on Onchocerciasis, organized in November-December 1953 by WHO in Mexico, at which he acted as chairman. The part he took in drafting the report of this committee may well have been the last work of this outstanding scientist, through whose untimely demise medicine the world over has suffered an irreparable loss.

STATISTICAL STUDY ON INFANT MORTALITY

A sharp decline in infant mortality in many countries is recorded in a number of the *Epidemiological and Vital Statistics Report* [1]

TABLE I. INFANT MORTALITY, 1900-52: DEATHS OF INFANTS UNDER ONE YEAR OF AGE PER 1,000 LIVE BIRTHS IN SAME YEAR

Countries	1901-05	1921-5	1952
Australia	97	—	24
Belgium	148	—	35
Canada	—	98	38
Ceylon	171	—	78
Chile	264	—	134
Denmark	119	—	29
England and Wales	138	—	27
Finland	131	—	32
France	139	—	41
India	—	206	116 (1951)
Ireland	94	—	41
Israel	—	126	39
Italy	167	—	64
Malta	—	270	72
Mauritius	—	142	81
Netherlands	136	—	23
New Zealand	75	—	84
Northern Ireland	108	—	39
Portugal	144	—	94
Scotland	120	—	35
Spain	172	—	54
Sweden	91	—	20
Switzerland	134	—	29
USA	—	74	29

[1] *Epidem. vital. Statist. Rep.* 1954, 7, 1

TABLE II. PERCENTAGE DECREASE IN INFANT MORTALITY

Countries	Between 1901-05 and 1921-5	Between 1921-5 and 1952	Between 1901-05 and 1952
Australia	41	58	71
Belgium	31	58	71
Denmark	31	64	76
England and Wales	45	64	80
Finland	27	67	76
France	32	57	71
Ireland	26	41	56
Italy	24	50	62
Netherlands	49	67	83
New Zealand	43	49	71
Northern Ireland	24	52	64
Norway	35	50	68
Scotland	23	62	71
Spain	17	62	69
Sweden	34	67	78
Switzerland	51	55	78

in which statistics for thirty countries and territories for the period 1900-53 are presented. In 1900, the infant death-rate varied from 264 per 1,000 live births in Chile to 75 in New Zealand; today, some countries have an infant death-rate of between 20 and 30 per 1,000 live births, and an average reduction of 70% to 80% has been experienced in the countries studied in the report.

The accompanying tables give an indication of this downward trend in infant mortality in some of the countries for which data are available.

Notes and News

Eye Diseases among Arab Refugees

During 1953, an attempt was made to study the occurrence and possible causes of acute conjunctivitis and trachoma at the Anjar camp for Arab refugees. Nearly half of the camp's population of 1,923 persons is made up of children under 15 years of age.

It was noted that the prevalence of eye infections increased steadily from April to October, i.e., during summer, the maximum being 36.7% of the camp population. Observations made during this period of high prevalence suggested two possible modes of transmission : flies, and fingers—the latter by reason of rubbing the eyes because of dust irritation resulting from wind. Control measures which were undertaken included better disposal of garbage, manure, and excreta; spraying fly-breeding and fly-attractive areas with 4% chlordane in oil; and practical lessons in personal hygiene among schoolchildren.

Tuberculosis Centre in Patna

An international team which aided in the establishment of a tuberculosis control and demonstration centre in Patna, Bihar State, India, completed its assignment at the end of 1953. The centre was set up with WHO technical advice and was financed in part by United Nations Technical Assistance funds; UNICEF provided substantial amounts of supplies and equipment. The centre is located in a spacious, modern building, where 300 patients daily can be given complete examination for tuberculosis. It is meant to serve as a nucleus for further expansion of tuberculosis-control activities throughout the State.

Since its official opening in September 1952, nearly 50,000 persons have been examined at the centre. In addition, training has been given to professional personnel : 14 graduate nurses from various parts of India took a three-month special course during the last quarter of 1953; and, earlier, 25 physicians had attended a postgraduate course in tuberculosis control which was arranged by members of the WHO team and their national counterparts. Numerous lectures and conferences have been given at the centre and in local hospitals and training institutions in Patna.

Dr. B. K. Bannerjee is Director of the centre. From March 1952 to October 1953, the international staff was under the direction of Dr. F. Ivaldy, who is now on a new assignment for the Organization in Ceylon. Upon the departure of Dr. Ivaldy, Dr. R. Neumann, epidemiologist of the WHO team, served as acting senior adviser until the international staff withdrew. He and the WHO public-health nurse, Miss Mary O'Connell, have now been re-assigned to a WHO-assisted tuberculosis project in Kabul, Afghanistan.

Tuberculosis Diagnostic Laboratory Opened in Cairo

A completely modern laboratory for the diagnosis of tuberculosis was opened in Cairo on 20 April 1954. This laboratory, a project of the Egyptian Government, has been established with aid from WHO and the Technical Assistance programme. In addition to providing equipment for the laboratory, the Organization recruited Miss B. Eickoff, a laboratory technician, who is assisting in setting up the equipment and training the staff.

Malaria Control in Afghanistan

According to a report submitted jointly by the WHO Senior Malaria Adviser in Afghanistan, Dr. S. L. Dhir, and the President of Afghanistan's National Malaria Organization, Dr. Abdul Rahim, four years of intensive antimalaria operations undertaken by the Government with the assistance of WHO and UNICEF have resulted in successful control of the disease among approximately two-thirds of the total malarious population of the country. Plans have been drawn up for further expansion of malaria control : new areas with a population of about 580,000 are expected to be covered during 1954 and 1955, and this expanded programme should virtually rid the country of malaria.

Particularly significant are the economic benefits already evident as a result of the successful control of malaria : for example, in the town of Pulikhumri, where there are textile mills, the total population had been only about 5,000, and production of textiles had suffered considerably; now, owing to improvement in health conditions, the population has increased to around 20,000, and the output of the mills has almost doubled. A similar benefit has been noted in agricultural areas : in Kataghan Province, which was notorious for prevalence of malaria, large tracts of land have been brought under cultivation since the beginning of antimalaria operations in 1950; and the annual yield of the rice and cotton crops in the districts of Kunduz and Khanabad has been practically doubled during the past three years—mainly,

it is believed, because of the waning prevalence of malaria.

Environmental Sanitation Projects

Burma

In February 1954, WHO signed an agreement with the Government of the Union of Burma for assistance in strengthening the country's environmental sanitation services. WHO aid will be concentrated particularly on training sanitarians and health assistants. The Government has recently established a Division of Environmental Sanitation in the Office of Health Services at Rangoon, and two Burmese engineers who were trained abroad have returned to direct this Division. WHO is providing the services of a public-health engineer for this project; UNICEF is also aiding, through the provision of supplies and equipment for use in the training areas.

Egypt

As part of the bilharziasis-control project which is going forward in Egypt, a survey was made of excreta disposal facilities in the five principal villages of the project area. Nearly 700 houses were inspected, and it was found that 445 had bored-hole latrines, 150, pit latrines, and the rest, no facilities at all. The pit latrines were considered superior, since 63% of the bored-hole latrines were not in working condition.

Training Course in Brucellosis

A training course in the control of brucellosis for the Caribbean area was held in Mexico City from 1 to 13 March 1954. Veterinarians, bacteriologists, and other specialists from Costa Rica, Cuba, the Dominican Republic, El Salvador, Guatemala, Haiti, Jamaica, Mexico, Nicaragua, Panama, and Trinidad attended this course, which had as its aim the demonstration of modern techniques in the diagnosis of brucellosis and the promotion of uniformity of methods.

The course was sponsored by the Government of Mexico, with WHO assistance in the form of provision of fellowships, the services of consultants lent by the US Public Health Service, equipment and teaching materials, and secretarial and translation services.

Dr. Berthet Heads International Children's Centre

Dr. Etienne Berthet who was WHO tuberculosis consultant in Turkey and, more recently, in Syria,[1] has been named Director-General of the International Children's Centre in Paris. The Centre, which was established in 1949 by the French Government, in co-operation with UNICEF, is concerned with teaching research, and various types of studies on medico-social problems affecting children. Dr. Berthet assumed his post at the Centre in May.

Eighth Session of the United Nations Statistical Commission

The United Nations Statistical Commission held its eighth session in Geneva from 5 to 22 April 1954. The subjects covered, although very largely of an economic nature, included some health aspects, and representatives from the World Health Organization were accordingly invited.

The documentation presented included a review of international statistics existing in the social field, covering not only vital and health statistics proper, but also statistics of a number of factors influencing public health, such as housing, nutrition, education, etc. It included also a report on the definition and evaluation of levels of living. It is noteworthy that two Specialized Agencies having participated in the preparation of the report placed health indices at the top of the list of indicators of levels of living.

No technical discussion took place on the indicators of health or on the factors of health, these being left for the consideration of the WHO Expert Committee on Health Statistics.

While the meeting illustrated the co-operation existing between the statistical services of the United Nations and of the Specialized Agencies, the documentation prepared with the latter's collaboration will constitute, when in its final form, a valuable key to existing statistical material relating to factors influencing health, and will therefore be of interest to the hygienist and the sociologist.

[1] See *Chron. Wld Hlth Org.* 1952, 6, 135; 1953, 7, 236.

Views on WHO

World Health Problems

An appreciation of the work of WHO appears in *International Conciliation* for May 1953. Sir Arcot Mudaliar writes :

" . . . It may be said that no organization has created a better impression nor given more confidence to the peoples of the world than the World Health Organization—by the effectiveness of its program, by the manner in which it has always kept the international outlook in the forefront, and by the unfailing discharge of those duties with which it has been charged . . . all the world over, the 7th of April is observed as World Health Day, and in undeveloped and underdeveloped countries as well as in more progressive countries, this day is observed as a special day when the thanks of the people concerned are given to this great international organization. Writing on World Health Day in its issue of 7 April 1953, a leading daily of India states :

" ' The World Health Organization never attempts to be a fairy godmother, solving all public health problems of under-developed nations. Its assistance is given only when asked for by the Governments concerned and its aim is to afford opportunities for such administrations to help themselves . . . In India anti-malarial campaigns, undertaken with World Health Organization assistance, have been successful. There has been an increase in the population of the Terai region and the area under cultivation has gone up by forty thousand acres. Equally striking successes are claimed in the eradication of malaria in some of the most deadly hotbeds of this disease in Burma. In the battle against tuberculosis, the World Health Organization helps in the training of doctors, nurses, home visitors and X-ray technicians . . . While there may be some argument regarding the usefulness and efficacy of other types of technical assistance extended to under-developed countries, there cannot be two opinions about the usefulness of the humanitarian and nation-building activities of bodies like the World Health Organization and the United Nations International Children's Emergency Fund . . . ' "

International Co-operation

In the June 1953 number of *Public Health Reports*, Dr. Hyde, Chief of the US Public Health Service's Division of International Health, writes of the nature and functions of WHO. The following extract from his article shows the ways in which WHO co-operates with other international organizations in the promotion of world health :

" . . . The World Health Organization is not working alone. Rather, it is the coordinating force in a complicated structure of many agencies. Under its constitution it is the ' coordinating and directing authority in international health work '.

" There are a number of agencies concerned with various aspects of world health : United Nations International Children's Emergency Fund; United Nations Educational, Scientific, and Cultural Organization (UNESCO); the Food and Agricultural Organization (FAO); the Technical Cooperation Administration (TCA); the Mutual Security Administration (MSA); the Colombo Plan; private agencies and foundations, industry, churches, and others. Each has its special motivation, its special drives, its own resources, its special values. . . .

" The job of the World Health Organization is not, as some have proposed, to stand alone and do the whole job of international health. Rather, its job is to mobilize the great forces that are available; to give the lead to us all.

" It is doing this. It is increasingly setting the sights for all agencies, pointing up opportunities for social and economic advancement through health improvement. It has brought about jointness of operation in the place of what could have been duplication and waste. Examples of its coordinating activity are found in joint committees with FAO, ILO (International Labour Organisation), and UNICEF, and in the holding of coordinating conferences among the operating staffs of the various agencies in the field of health. Such conferences have been held at the country level. They are held regularly in certain regions and have been held at the world level in Geneva. . . .

" In health it is fair to say that under the leadership of the World Health Organization the various national and international programs have become, in a very real sense, a single, unified movement with a common goal and common methods of attaining that goal. . . ."

WHO's Mass Treatment Campaigns

Describing fifty years of international work in the field of venereal-disease control (*Public Health Reports*, August 1953), Dr. T. J. Bauer, medical officer in charge of the Communicable Disease Center, Atlanta, Ga., comments on the experience gained from WHO's mass treatment campaigns :

" . . . One of the most significant undertakings of WHO in treponemal disease control, in terms of

permanent progress, is the training phase of the program. Personnel are being indoctrinated in essentials of public health practice which will serve both specialized treponemal disease campaigns and generalized health programs. For the private physician in contact with epidemiological and treatment demonstrations, there is opportunity to learn some of the attitudes and substance of preventive medicine —particularly important in areas where physicians receive little of these in their medical training. . . .

" Towering above all other results, real or potential, of international treponemal and venereal disease control is the prospect that the massive prevalence of these diseases may be cut down and possibly eradicated in large areas. Both in terms of humanitarian objectives and of economic improvement of the areas involved, this prospect has very broad ramifications indeed.

"It has been pointed out that treatment alone has never eradicated a disease on a global scale; neither has vaccination nor environmental sanitation. But history abounds with instances of disease controlled by public health methods, and WHO's experience with mass treatment of venereal and treponemal disease encourages the belief that control and possibly eradication of these infections can be achieved. . . .

" A single mass treatment campaign in an area is not sufficient to master permanently the venereal or treponemal disease problem in that area. Successful public health programs are usually protracted affairs. In treponemal and venereal disease, there must be a continuing effort to decrease the number of infectious cases, and resurveys are necessary to prevent recrudescence. Many factors—extent of the disease, completeness of case finding, opportunities for reintroduction—must be considered before the question of how many mass surveys can be answered for an area. Infectious cases must be brought down to the point where the local case-finding and treatment operation is adequate to deal with remaining pockets of infectious cases. Clearly, the more mature and complete the local public health organization, the earlier it can assume full responsibility for the local disease situation.

" This fact helps to illuminate the wisdom of WHO's approach to venereal and treponemal disease control : to aid, to the extent of its resources, in the immediate diminution of disease in areas of greatest need, and at the same time to assist in building permanent public health structures especially through training of native personnel. This kind of attack, well supported and continuous, makes bright the hope that effective worldwide control of venereal and treponemal disease can be accomplished."

WHO and UNICEF in Yaws Control

In an article entitled " The principles and practice of yaws control" (*Brit. med. J.* 1953, **2**, 74), Dr. C. J. Hackett, of the Wellcome Museum of Medical Science, London, describes the treponemal-disease-control programmes of WHO and UNICEF. He summarizes the work of these campaigns in the following words :

" For a long time yet the sequence of census, survey, and treatment of yaws will be required. Procaine penicillin or some other depot preparation will, with difficulty, be improved upon. The importance of recognizing cases in the latent secondary stage of the infection must be emphasized; some way to doing this is urgently needed.

" An anti-yaws campaign is only a means to an end, and that end is the gradual and stable development of improved rural health services. This alone can justify the efforts required to carry out an effective anti-yaws campaign. Such a campaign, in areas where yaws is endemic, is probably the best first step in the improvement of rural health services.

" The work of the World Health Organization and the United Nations International Children's Emergency Fund in assisting treponematosis control work in various countries is of great importance, and is an encouragement for the future. Reynolds *et al.* (1951) discuss the ways this help can be most effectively applied.

" Professor G. Macdonald, of the London School of Hygiene and Tropical Medicine, saw this article before publication and has made the following pertinent comments :

" ' I am convinced that the general principle is sound. The extension of such work depends on what is wanted. If what is wanted is to start a rural public health service, there is no doubt that the best way of doing so is through measures which are immediately obvious to the population as beneficial, and of course yaws is one of the more prominent examples. Credit earned by this work could be used to persuade people not to accept other obviously less useful work. If I were starting such a scheme I would want a curative measure, such as yaws treatment of this nature, and also an environmental measure. Quite the best example of the latter is the application of residual insecticides in houses, which is appreciated at once for the effect on fleas and flies and later for that on malaria. I would therefore start with a yaws campaign and a residual insecticide campaign as initial steps towards a rural health centre service which undertook environmental and curative work. The approach, in the paper, to the curative side of it seems ideal.' "

International Non-Proprietary Names

In accordance with paragraph 3 of the Procedure for the Selection of Recommended International Non-Proprietary Names for Drugs Moving in International Commerce,[1] notice is hereby given that the following name is under consideration by the World Health Organization as a proposed international non-proprietary name :

Proposed International Non-proprietary Name (Latin, English, French)	*Chemical Name or Description* (English, French)
levallorphanum	
levallorphan	(-) 3-hydroxy-*N*-allylmorphinan
levallorphane	(-) hydroxy-3 *N*-allylmorphinane

[1] See *Chron. Wld Hlth Org.* 1953, 7, 297.

Comments on, or formal objections to, the above name may be filed within a period of six months from 1 July 1954, and should be forwarded to: The Director-General, World Health Organization, Palais des Nations, Geneva, Switzerland.

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